

# PATENT COOPERATION TREATY

# PCT

**Rec'd PCT/PTO 25 SEP 2006**

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

**10/553476**

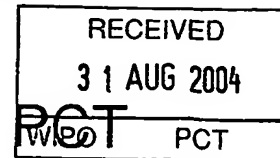
Applicant's or agent's file reference <b>FE6102</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/EP2004/003638</b>	International filing date ( <i>day/month/year</i> ) <b>01 April 2004 (01.04.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>17 April 2003 (17.04.2003)</b>
International Patent Classification (IPC) or national classification and IPC <b><sup>7</sup> C08F 10/00, B01J 8/24</b>		
Applicant <b>BASELL POLIOLEFINE ITALIA S.r.l.</b>		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 6 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44 <i>bis</i> .3(c) and 93 <i>bis</i> .1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44 <i>bis</i> .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 740 14 35</p>	<p>Date of issuance of this report 21 October 2005 (21.10.2005)</p> <p>Authorized officer  <b>Agnes Wittmann-Regis</b></p> <p>Telephone No. +41 22 338 89 70</p>
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/003638

International filing date (day/month/year)  
01.04.2004

Priority date (day/month/year)  
17.04.2003

International Patent Classification (IPC) or both national classification and IPC  
C08F10/00, B01J8/24

Applicant  
BASELL POLIOLEFINE ITALIA S.P.A.

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



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Authorized Officer

Droghetti, A

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/003638

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**Box No. 1 Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form .
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/003638

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/003638

**Re Item V.**

Reference is made to the following documents:

D1: EP A 0825204 (cited by the applicant)  
D2: EP A 1041087 (cited by the applicant as US A 6306981)  
D3: WO A 02/41986

**1. Novelty (Art. 33(2) PCT)**

The subject-matter of claims 1-14 is novel in view of D1-D3 for the following reasons.

1.1. D1 describes a continuous polymerisation process in a fluidized bed reactor, wherein a gaseous stream is recycled by cooling and separating the condensed liquid from the gas stream in the reactor as claimed (see search report),

No external pipe as claimed is disclosed in D1.

Thus the subject-matter of claims 1-14 is novel in view of D1.

1.2. D2 relates to a polymerisazion process in a fluidized bed reactor, wherein the separated condensed recycled liquid is introduced to the reactor in the upper portion by means of conduits or an external line. An external separator and a pump for transporting the liquid are necessary in D2 (see search report).

Thus the subject-matter of claims 1-14 is novel in view of D2.

1.3. D3 describes a fluidized bed reactor characterized by an external pipe, connecting the lower part of the reaction chamber with its upper portion.

An external separator for the condensed two-phase mixture is required (see search report).

Thus the subject-matter of claims 1-14 is novel in view of D3.

**2. Inventive Step (Art. 33(3) PCT)**

The subject-matter of claims 1-14 does not involve an inventive step for the following reasons.

D1, which is considered as the closest prio art, discloses a continuos polymerisation process as described above (1.1.; see also search report).

The present application differs from D1 in that the condeseed liquid separated from the two-phase mixture is transported via an external pipe to the upper portion of the reactor and in that no pumps are used for that.

The present application presents neither examples nor comparative examples illustrating the technical effects and/or the advantages deriving from the use the distinguishing features above over the prior art. On page 8 of the present application the applicant states that an improved cooling of the reactor (both upper portion and lower portion) is achieved.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/003638

The problem to be solved by the present invention may therefore be regarded as the provision of an alternative continuous process in a fluidized bed reactor having a good cooling system.

The solution proposed in claims 1-14 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

In D2 and D3 continuous process in a fluidized bed reactor are described, wherein comparable systems for transporting the condensed liquid to the upper portion of the reactor in order to improve the cooling of the same, without affecting the polymerisation process are disclosed (see the conduits and external line 31 in D2 and the external pipe in D3, see search report). Note that in D3 no pumps connected to the pipe are used.

Thus the skilled man starting from D1 and trying to provide an alternative continuous polymerisation process with good cooling of the fluidized bed reactor, would have found in D2 and D3 a hint to use the external pipe as claimed in order to solve the problem posed.

Therefore no inventive step in the subject-matter of claims 1-14 is involved.

**3. The subject-matter of claims 1-14 meets the requirements of Article 33(4) PCT, with regard to industrial applicability.**

**Re Item VII.**

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D3 is not mentioned in the description, nor is this document identified therein.